

Source Identification

- C1. Hire a staff person to identify sources of gear—Gear Expert Coordinator.
- C2. Establishing a Network of Fishing Gear Specialists.
- C3. Develop GIS of commercial fishing and aquaculture locations and seasons in the North Pacific
- C4. Create an international reference (targeted) database and gear reference collection, available by region
- C5. Build a constituency for the importance of source identification.
- C6. Website for identification of gear fragments.

Source Identification: Recommendation C1

Title: Hire a staff person to identify sources of gear—Gear Expert Coordinator.

Concern:

Author(s): John Henderschedt, Al Burch, Nina Young, David King, Kevin Kelly

I. Description:

RECOMMENDATION: Hire a staff person whose sole responsibility is to establish a network of gear technologists, establish and manage the standard reference collection for the source identification of fishing gear collected during debris removal efforts.

QUALIFICATIONS: The qualifications of this individual should be specialist/coordinator.

RESPONSIBILITIES:

- Establish a network of individuals familiar with fishing gear construction and use in Pacific fisheries.
- As a priority, coordinate periodic examinations, by gear experts, of intact derelict gear (whole portions of nets or material taken as a result of underwater retrieval).
- Maintain records and catalog sub-samples, pictures, and descriptions of individual pieces of gear as part of a national/regional/ and international standard reference collection and database.
- Investigate gear of unknown origin (gear that could not be identified by the experts) that has been retrieved to ascertain sources and verify source determinations of gear experts. Verification should include contact and discussions with potential source fisheries/industries.
- Provide information for the website for gear identification.
- NOTE: The intent is that this information will be made available to the public for educational purposes and cannot be used to take enforcement actions against a particular fishery or individual.

II. Methods/Steps for Implementing Action:

Secure funding either through federal appropriations or through a private funding source (or combination thereof) for this position. Position should be housed either in NMFS, in an academic institution, or organization highly involve in marine debris removal. Position should be filled no later than January 2001.

III. Type of Action:

Research, Administrative, & Assessment

IV. Where should Action be Implemented (specify general geographic areas)?

Include minimum spatial extent: The action should first be implement in areas that have been identified as priority areas for marine debris/derelict fishing gear removal and where historic removal efforts have occurred (e.g. Hawaii and Alaska).

Urge other nations to establish a similar position and database capability so as to coordinate efforts internationally.

Habitat Type Affected: Coral reef and pelagic ecosystems and other marine ecosystems throughout the Pacific.

V. Who Implements Action?

Depending on the funding source this action will be implemented either through the federal government or a private institution. Other nations should be encouraged to develop a similar capacity or provide support for this position.

VI. What is Cost of Action (Estimate)?

One Time (Start up)	Annual O & M
<\$10,000	\$100,000 to \$500,000

VII. Who Finances?

Salary and budget for travel, management of catalog, and travel for experts.

VIII. What are the Benefits (environmental or economic) from Implementation?

The immediate benefit would be the development of a more effective and targeted educational program. The goal and objective would be to: change behavior, create awareness, and eliminate sources of derelict fishing gear through education and outreach. A clear source of information and a conduit to the fishing community, international experts, and gear manufacturers.

IX. Identify the Resources (living or physical) Affected by Action:

Industry: Fishing communities, international gear experts, and gear manufacturers.

Environment: marine life and ecosystems.

Source Identification: Recommendation C2

Title: Establishing a Network of Fishing Gear Specialists.

Concern: No means to effectively identify sources of derelict fishing gear

Author(s): John Henderschedt, Al Burch, Nina Young, David King, Kevin Kelly.

I. Description:

The network of fishing gear experts should be familiar with material usage, fishing gear maintenance and construction. The network should be representative of the various international fisheries operating within the Pacific. Several individuals may be necessary to cover the various fisheries within a geographic area.

The gear experts would be available to assist in the identification of derelict gear, investigate unknown or difficult to identify sources of derelict gear, and provide source information/material for database development.

The gear expert/coordinator would coordinate the efforts of the fishing gear experts (see previous recommendation).

II. Methods/Steps for Implementing Action:

Hire the gear expert coordinator to begin to identify candidates for this network.

Develop contacts through fishery organizations and industry, through direct commercial contacts, to find to various gear experts and solicit their input or participation.

The initial search should be directed at the fisheries/nations that may be the likely source of the derelict fishing gear.

Invite gear experts to examine gear that has been removed and provide opportunities for these experts to provide their input throughout the process.

III. Type of Action:

Research, Assessment

IV. Where should Action be Implemented (specify general geographic areas)?

Include minimum spatial extent: Hawaii and Alaska (Areas where removal efforts have been conducted) in conjunction with removal efforts. International throughout the Pacific Basin

Habitat Type Affected: Coral Reefs

V. Who Implements Action?

Gear expert coordinator

VI. What is Cost of Action (Estimate)?

One Time (Start up)
<\$10,000

Annual O & M

Budget is included under the gear expert coordinator position

VII. Who Finances?

See the recommendations under the gear expert coordinator position

VIII. What are the Benefits (environmental or economic) from Implementation?

The benefit of these experts would be in the development of a broad-base source of individuals to assist in the identification of gear and the creation and maintenance of the reference database.

Other benefits are discussed in the gear expert coordinator recommendation.

IX. Identify the Resources (living or physical) Affected by Action:

Industry: Fisheries, gear manufacturers, federal agencies, and institutions involved in gear removal.

Environment: coral reef and pelagic ecosystems and marine wildlife

Source Identification: Recommendation C3

Title: Develop GIS of commercial fishing and aquaculture locations and seasons in the North Pacific.

Concern:

Author(s): Dave Foley, John Henderson, and Michael Reppy

I. Description:

Create a Geographical Information System (GIS) mapping of fisheries geographic and temporal distribution around the North Pacific Rim, using effort data for each fishery. Include data on distribution and effort of aquaculture.

II. Methods/Steps for Implementing Action:

Compile existing data on fisheries from nations fishing in the North Pacific. Update data as new information or reports become available. Possible sources of these data include the Food and Agricultural Organization (FAO) of the United Nations or other similar international organizations.

Incorporate data into GIS format.

III. Type of Action:

Research

Initial compilation would be library or literature research. Subsequent updates would be monitoring.

IV. Where should Action be Implemented (specify general geographic areas)?

Include minimum spatial extent: Pacific basin, including waters bordering Pacific rim nations.

Habitat Type Affected: Highly variable, including pelagic, continental shelf, coral reefs, and inshore waters (aquaculture).

V. Who Implements Action?

Action should not require a full-time position. Compilation should be performed by a fishery biologist with the National Marine Fisheries Service.

VI. What is Cost of Action (Estimate)?

One Time (Start up)	Annual O & M
\$10,000 to \$50,000	<\$10,000

VII. Who Finances?

NOAA/NMFS

VIII. What are the Benefits (environmental or economic) from Implementation?

Information is necessary to conducting any action implemented as a result of this conference. For example, establishing a database of derelict gear types requires knowledge of where to look and whom to approach to garner information on the types of debris. Any education or outreach organization would need to know where to target their activities. All parties interested in the issue of derelict fishing debris would benefit from this information.

IX. Identify the Resources (living or physical) Affected by Action:

No resources are directly affected by the action.

Source Identification: Recommendation C4

Title: Create an international reference (targeted) database and gear reference collection, available by region

Concern:

Author(s): Dave Foley, John Henderson, John Wang, John Henderschedt, Michael Reppy

I. Description:

A database should be created and maintained which describes fishing gear and equipment, and fishing practices. The database should include information on gear types and specifications. Data would be provided by a cadre of gear experts, ideally distributed regionally among world fishing countries.

The data would whenever possible be based upon collections of reference materials, maintained and curated regionally. The database would be maintained in a central location.

The data which is business confidential within the database will be password protected in order to protect fisheries that have contributed to the database.

II. Methods/Steps for Implementing Action:

Step I. Identify user groups and obtain their input regarding the types of information required. Potential users include beach cleanup groups, resource managers, fishery agencies, and other interested personnel.

Step II. Establish standardized protocol for data submission formats, for example: digital images, descriptive texts, refined quantification, measurements, etc. Also establish criteria for submission of samples of derelict gear.

Step III. Establish infrastructure for data acquisition, processing, and storage.

Step IV. Identify target areas, using fisheries maps for potential sources and input from experts.

Step V. Have coordinator allocate resources to fill in gaps.

Step VI. Establish (web-based) infrastructure for distribution.

Step VII. Maintain and update regional reference collections and database

An additional step should be for the FAO to update the World Congress on Fishing Gear and Methods.

III. Type of Action:

Monitoring, Educational

IV. Where should Action be Implemented (specify general geographic areas)?

Include minimum spatial extent: Action could be implemented in any geographic region.

Habitat Type Affected: The action will not directly affect any habitat.

V. Who Implements Action?

The data should be maintained by an international agency, such as the Food and Agricultural Organization (FAO) of the United Nations.

VI. What is Cost of Action (Estimate)?

One Time (Start up)	Annual O & M
\$500,000 to \$1,000,000	\$50,000 to \$100,000

VII. Who Finances?

Financial support should be provided by the United Nations.

VIII. What are the Benefits (environmental or economic) from Implementation?

The database would allow outreach and education organizations to identify derelict fishing gear, and to better direct their outreach efforts to fisheries that are losing or discarding equipment and gear, and to avoid fisheries that do not have problems with derelict gear. Information could also be provided to fishery agencies.

Implementing this action will in the long run help eliminate derelict fishing gear at its source(s), by increasing the efficiency of outreach activities.

IX. Identify the Resources (living or physical) Affected by Action:

The action does not directly affect living resources. However, the action will indirectly benefit all living resources impacted by derelict fishing gear, by helping reduce the introduction of this material into the marine environment.

Source Identification: Recommendation C5

Title: Build a constituency for the importance of source identification.

Concern:

Author(s): Nina Young, John Henderson

I. Description:

The goal of building a constituency of fishermen, gear experts, and manufacturers is to make these groups aware of the problem of derelict fishing gear, but more importantly, to enlist their support in efforts to identify sources of derelict fishing gear. This is a critical component of any source identification strategy. The trust and support of the fishing community is essential to determining the source of derelict fishing gear.

In addition, it is important to develop a constituency among government agencies, non-governmental organizations, and educators.

II. Methods/Steps for Implementing Action:

FISHING INDUSTRY

- Compose a list of fisheries, fishermen, fishing vessel owner associations, gear manufacturers, and fishermen associations.
- Conduct workshops or meetings, in cooperation with these groups, in various fishing ports and provide information tailored to the fishing community about derelict fishing gear, removal efforts, and the goals and objectives of source identification efforts. It is important to seek help and cooperation rather than telling the fishery what you want them to do.
- Work with the industry to identify individuals or associations that can provide a leadership role in organizing source identification efforts and outreach to the fishing community.
- Consider publicizing efforts either through industry publications and websites or through a separate newsletter.
- Establish incentives and other mechanisms to reward and recognize innovative or cooperative efforts.
- Recognize those fisheries that have an outstanding record related to waste handling, reduction, or recycling.

GOVERNMENT AND NGOs

- Provide general information related to the threats posed by derelict fishing gear to marine life and the marine environment. Clearly articulate the importance of an effective source identification program to target education.
- Provide government agencies and NGOs with opportunities to partner in removal and source identification efforts.
- Conduct workshops and provide information tailored to government agencies, NGOs, and educators about derelict fishing gear, removal efforts, and the goals and objectives of source identification efforts.
- Work with the industry to identify individuals within the agency, Congress, and NGOs who can provide a leadership role in securing federal and private funding, organizing removal efforts and source identification efforts and outreach to the general public.
- Publicize these effort through newsletters, websites, talks are various symposia and workshops.

III. Type of Action:

Educational, Other: Constituency Building

IV. Where should Action be Implemented (specify general geographic areas)?

Include minimum spatial extent: The action should first be implement in areas that have been identified as priority areas for marine debris/derelict fishing gear removal and where historic removal efforts have occurred and areas that are potential source of derelict fishing gear (e.g. Hawaii and Alaska).

It is important that in establishing a constituency, that organizers go to the fishing community rather than asking the community to come to them.

Habitat Type Affected: Not Provided

V. Who Implements Action?

The action will be implemented through partnerships with the federal government, international organizations, NGOs, and the industry. The federal government should work closely with these partners to provide the information necessary to conduct effective outreach.

VI. What is Cost of Action (Estimate)?

One Time (Start up)
\$10,000 to \$50,000

Annual O & M
\$50,000 to \$100,000

VII. Who Finances?

Not Provided

VIII. What are the Benefits (environmental or economic) from Implementation?

The immediate benefit would be the development of an informed constituency to support marine debris monitoring, removal, and education efforts. The result will enable more effective and targeted educational program to the various constituencies. The goal and objective would be to: change behavior, create awareness, eliminate sources of derelict fishing gear through education and outreach, and secure international support for these efforts.

IX. Identify the Resources (living or physical) Affected by Action:

Industry: Fishing communities, international gear experts, and gear manufacturers.

Government agencies, Congress, international organizations, and environmental organizations.

Environment: marine life and ecosystems.

Source Identification: Recommendation C6

Title: Website for identification of gear fragments.

Concern:

Author(s):

I. Description:

Develop and maintain a website that provides access to gear identification/standard reference collection database. The website would provide general information on the location of fisheries, photos or keys of gear types by region, standard protocols for gear sampling, definition of terms, contacts for additional information, links to other websites of organizations associated with gear identification or marine debris removal efforts.

The data which is business confidential within the database will be password protected in order to protect fisheries that have contributed to the database.

II. Methods/Steps for Implementing Action:

The following actions must be completed prior to the development of the website:

Build the database.

Definite terms

Develop standardize collection protocols

Identify individuals to create and maintain the website

III. Type of Action:

Other: Information Source

IV. Where should Action be Implemented (specify general geographic areas)?

Include minimum spatial extent: Cyberspace--In coordination with the gear expert coordinator

Habitat Type Affected: N/A

V. Who Implements Action?

Depending on the funding source this action will be implemented either through the federal government or a private institution. Other nations should be encouraged to develop a similar capacity or provide support for this position.

VI. What is Cost of Action (Estimate)?

One Time (Start up)	Annual O & M
\$10,000 to \$50,000	\$10,000 to \$50,000

VII. Who Finances?

Not provided

VIII. What are the Benefits (environmental or economic) from Implementation?

The benefits of this website is international co-ordination, access to standardize fishing gear information, and a data source for gear identification for removal efforts.

Additional benefits include greater awareness of the marine debris issue and an avenue to foster international cooperation.

IX. Identify the Resources (living or physical) Affected by Action:

Industry: Fishing communities, international gear experts, and gear manufacturers.

Environment: marine life and ecosystems.

Researchers in the academic field